# ENTOMOLOGICAL NEWS

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# ENTOMOLOGICAL NEWS

VOL. LII MAY, 1941 No 5.

## On A New Subgenus of Pemphilidine Wasps From Cuba (Hymenoptera: Sphecidae)

By V. S. L. PATE, Cornell University, Ithaca, New York.

The Pemphilidine wasps are divisible into a dozen or more discrete generic entities, despite the asseverations of various competent authorities to the contrary. Some of these, such as *Dasyproctus,* are confined entirely to the Old World, while others like *Anacrabro* and *Entomocrabro* are restricted wholly to the western hemisphere. The great majority of the species, however, are referable to four large cosmopolitan genera: *Ectemnius, Crossocerus, Lestica* (olim *Solenius* seu *Ceratocolus*), and *Pemphilis* (olim *Crabro* F. nec Geof.), each of which comprises a number of distinct phyletic strains sufficiently discrete from one another by congeries of morphological, ethological, and biogeographical characteristics that they may be accorded subgeneric rank. The genus *Ectemnius* (olim *Crabro* Auctt., nec. F., nec Geof.) is separable at present into a number of such subgenera. To these may now be added the following striking and remarkable Antillean entity described herewith.

**MEROSPIS**[1] new subgenus.

The broadly expanded, thin and laminate, shield-like fore femora, the flattened fore tarsi, and the absence of an apical calcar on the middle tibiae of the males, distinguish *Merospis* from all the other subgenera of *Ectemnius.* The nearest affinities of the present distinctive entity appear to lie with the Old World subgenus *Metacrabro,* with which it agrees very closely in the venation of the fore wing and the slender elongate hind wing with the anal lobe vestigial. But in addition to the characters given above, *Merospis* differs from that complex in the finely punctate mesonotum, the strong inner basal mandibular

[1] *Merós* thigh + *aspis,* shield; in allusion to the expanded fore femora of the males.

tooth, and the sulcate ultimate abdominal tergite and emarginate antennal flagellum of the male.

*Diagnostic Features.*—Small forms. Head subquadrate in anterior aspect, transversely subrectangular to subquadrate in dorsal aspect. Eyes naked, much more coarsely facetted anteriorly than posteriorly; inner orbits very strongly convergent toward clypeus and antennal sockets. Malar space obsolete. Vertex flat; supraorbital foveae absent; ocelli normal, arranged in a low triangle. Temples wide above, tapering ventrad; postorbital and temporal carinae wanting. Front vertical, narrow, strongly concave between the inner orbits but the basin not margined dorsally by a transverse carinule. Antennae situated low on face on dorsal margin of clypeus, twelve-segmented in both sexes, the antennal sockets contiguous to each other and also to the nearest lower inner orbit; flagellum not dilated but emarginate in males. Maxillary palpi six-segmented, labial palpi four-segmented. Mandibles bifid apically, lower margin entire, inner margin armed at base with a very large, elongate, inwardly directed, acuminate tooth.

Thorax with pronotum narrow, transverse, crested anteriorly, humeral angles dentate. Mesonotum finely punctate; suture between mesonotum and scutellum simple. Prepectus anteriorly with a sharp epicnemium which is continued onto anterior face of mesopleura, mesopleura with a sharp vertical carina before middle coxae, impunctate but with coarse subparallel, subhorizontal costulae which are continuous onto the metapleura and the lateral and posterior faces of propodeum; dorsal face of propodeum with coarse, subparallel, longitudinal costulae.

Fore legs with opposing faces of coxae flat, closely appressed to one another and furnished anteriorly with a sharp longitudinal carina, the distal posterior margin projecting backward and downward in a thin, translucent, semicircular laminate plate. Fore trochanters flattened and somewhat expanded. Fore femora thin, flat, and dilated into an irregular trigonal shield, but without spines or teeth beneath. Fore tibiae strongly compressed and flattened, elongate trigonal in shape. Fore tarsi strongly flattened, the metatarsi as long as the four distal segments combined. Middle and hind legs normal; the metatarsi slender, elongate, longer than the four distal articles combined; middle tibiae of males without an apical calcar, hind tibiae with two. Fore wing with marginal cell broadly and somewhat obliquely truncate apically; transverse cubital vein straight, oblique, inclivous, received on radius at or a little before middle of marginal cell; recurrent vein joining the submarginal cell

very close to apex of latter, the second abscissa of cubitus much shorter than the length of transverse cubital vein. Hind wings slender, elongate, costa absent; anal lobe very small, vestigial, not clearly delimited.

Abdomen sessile; finely, inconspicuously punctate; ultimate tergite of male without a pygidium, but with a median longitudinal furrow on apical two-thirds.

*Genotype*: *Ectemnius* (*Merospis*) *cyanauges* new species.

This interesting group is known at present from only the genotypic species.

**Ectemnius (Merospis) cyanauges**[2] new species.

The brilliant, metallic blue color, ivory maculations, and the distinctive shape of the fore legs will immediately distinguish the present species from all of its New World congeners.

*Type*.— ♂ ; San Vincente, Pinar del Rio Province, CUBA. July 26-August 5, 1939. (C. T. Parsons.) [Museum of Comparative Zoölogy.]

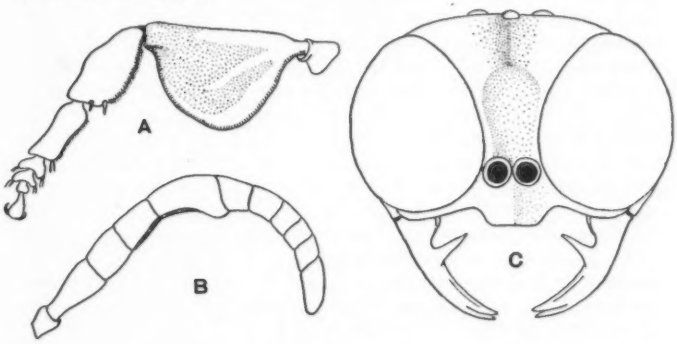


Fig. 1. *Ectemnius* (*Merospis*) *cyanauges* new species. Male (*type*; San Vincente, Pinar de Rio, Cuba): A, fore leg; B, pedicel and antennal flagellum; C, anterior aspect of head.

♂.—7 mm. long. Bright cyaneous; the following eburneous: scape anteriorly, mandibles on outer basal two-thirds, pronotum and tubercles above, postscutellum, all tibiae on outer faces, fore femora with a small spot at knee, middle femora beneath, fore metatarsi, abdomen with narrow elongate transverse spots later-

[2] *Kuanaugés*, of a bright blue color.

ally on first six tergites, those of second and fourth segments much longer and wider than the others. Black: scape behind, pedicel, flagellum, mandibles apically and on inner and lower margins. Tegulae, axillary sclerites, and middle and hind tarsi, dark brunneous. Fore trochanters, and fore femoral shield with fore and hind margins and a narrow discal streak, castaneous. Wings hyaline, infumated anteriorly particularly in marginal and submarginal cells; veins dark brunneous.

Head fulgid; clypeus with lower inner and posterior orbits densely clothed with shining, appressed silvery pubescence; vertex, occiput and temples with rather long, suberect, inconspicuous, dark grey pubescence. Front with scapal basin strongly concave, nitidous, glabrous, not margined dorsally by a transverse carinule. Vertex, occiput, and temples with fine, separated, setigerous acupuncturation; vertex bisected anteriorly by a strong furrow running forward from median ocellus into scapal basin of front; no trace of supraorbital foveae; ocelli situated in a very low triangle, the postocellar line six-tenths the length of ocellocular distance; temples without orbital or temporal carinae; occipital carina distinct, forming a complete circle which is tangent below to the hypostomal carinule. Antennae short, reaching about to occiput; scape cylindrical, four-sevenths the vertical length of eye; pedicel subcylindrical, short, one-half the length of first flagellar article; flagellum with first four articles elongate, the first one-and-one-half the length of second which is subequal in length to third, the fourth one-and-one-sixth the length of first, remaining segments, except last, but one-half the length of first, ultimate article simple, terete, subequal in length to two preceding segments combined, the third segment slightly, the fourth strongly emarginate beneath. Clypeus narrow, linear, flat laterally to weakly tectate discally, median length two-sevenths vertical length of eye, produced medio-apically into a short broad truncate lobe the apical width of which is subequal to median length.

Thorax fulgid; generally clothed with rather long, suberect, light pubescence. Pronotum narrow, transverse, situated on a level with mesonotum, anterior dorsal margin sharply transversely carinate for entire width save for a deep median notch, the lateral angles acutely dentate, posterior margin narrowly but deeply impressed. Mesonotum with well separated, distinct, setigerous acupuncturation throughout, anteriorly with a few transverse, curved, weak and indistinct striae, anterior half with three parallel well separated carinules; suture between mesonotum and scutellum simple, not foveolate; scutellum per-

fulgid, very sparsely acupunctate, flatly tumid, posterior margin abruptly and deeply impressed and foveolate; axillae not margined laterally; postscutellum transverse, linear, short, one-half length of scutellum, perfulgid, subnitidous, almost impunctate. Mesopleura impunctate but with fine and coarse subhorizontal and subparallel costulae more or less continuous onto metapleura and lateral and posterior faces of propodeum, episternal suture inconspicuously foveolate, descending from below tegula and curving forward onto anterior face of mesothora, mesopleural pit almost obliterated by striation, episternauli, hypersternauli, and sternauli not evident, posterior margin inconspicuously foveolate; prepectus anteriorly with a sharp epicnemium, the carina forking dorsally into carinules which parallel the lower and posterior margins of pronotal tubercles. Propodeum perfulgid; clothed with pubescence like thorax; entire dorsal face with an undemarcated transverse subrectangular area traversed by subparallel longitudinal costulae; posterior face bisected by a deep, narrow, nitidous sulcus, and crossed by horizontal parallel rugulae which are continuous from lateral faces; lateral carinae wanting.

Legs with tibiae unarmed with spines on outer faces; otherwise as in subgeneric diagnosis.

Abdomen sessile, perfulgid; tergites with sparse, well separated, very fine acupuncturation, the ultimate tergite somewhat more distinctly and closely punctate than preceding tergite and with a median longitudinal furrow; penult tergite with an inconspicuous, transverse median constriction, last tergite with a stronger more perceptible one. Venter with first three sternites flatly convex, perfulgid, subnitidous, glabrous, with microscopically fine cancellate sculpture; fourth, fifth and sixth sternites flatly concave, subopaque, with close fine acupuncturation; seventh and eighth sternites flat, densely pilose, seventh with a deep, roundly V-shaped emargination posteriorly, eighth with caudal margin shallowly, broadly, circularly emarginate.

♀.—Unknown.

This species is known only from the unique male described above.

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**The Malaria-carrying Anopheles gambiae.**

Discussing the Malaria situation created by this mosquito in Brazil, President Fosdick in his Rockefeller Foundation Review for 1940 says: "No evidence of gambiae in Brazil was found during the last 47 days of 1940."

## Additions to the List of Nevada Dragonflies (Odonata).

By Ira La Rivers, Reno, Nevada.

Since the publication of my "Preliminary Synopsis of the Dragonflies of Nevada" (1940), several less common and more localized species have been found along two portions of the State's boundary. As the author had previously suspected, there are a number of West Coast dragonflies, hitherto accredited only to the region west of the Sierra Nevada Mountains, to be found crossing the Nevada-California line at those points where spurs or isolated peaks of the Sierra Nevada system lie in Nevada. The two regions so-far most productive of new dragonfly records along this border are Lake Tahoe and Boundary Peak.

The lake, whose surface waters lie at an approximate elevation of 6,225 feet, is surrounded by a ring of high Sierra peaks which vary from 7,000 to nearly 9,000 feet in height, the taller summits lying on the California side and forming the crest of the range. However, the ecologic environments do not differ considerably, on the average, from one side of the lake to the other, and the characteristic odonate species of this montane lake occur indifferently on either side. The summit of the Sierras strikes tangent from the north-northwest towards the lake, and approaches the Nevada line most closely near the south end of the lake. The entire eastern shoreline, and nearly half of the northern, lies in Nevada, so that it was to be expected when the author's first list was prepared that a number of California species not yet accredited to Nevada, but occurring in the adjacent Sierra Nevadas, might well be found at Lake Tahoe. A favorable spring and summer's collecting season here has verified these conclusions.

Boundary Peak, the tallest point in Nevada, rises to a height of 13,145 feet, and lies exactly 117 miles southeast along the Nevada-California boundary from the southern tip of Lake Tahoe. It is the most northern summit of the lofty White Mountain Range which parallels the upper portion of the

southern Sierras, and may properly be considered a part of that extensive system, although separated from the Sierras themselves by the long and prominent Owens Valley. Here in the vicinity of Boundary Peak, which lies just inside the Nevada line, the author has taken several species of dragonflies which Ahrens recorded in 1938 from nearby Yosemite, which lies but a scant 45 miles (in a straight line) from the peak.

New species have also turned up along the ever bountiful Rio Colorado, which forms Nevada's extreme southeastern border. This stream has been the gateway used by several subtropical species in their expansion northward into the Great Basin, and it is not unlikely that other southern forms will be found here in the future.

In the following list, most of those species already recorded for the State in the author's "Synopsis"; have been given a more extended range within it as a result of the last season's collecting. An asterisk (*) denotes species accredited to the area by other writers, but overlooked in the "Synopsis", a double asterisk (**) those species which have been taken, to the author's knowledge, in the State for the first time.

Subfamily GOMPHINAE.

OPHIOGOMPHUS MORRISONI Selys—Ormsby and Washoe Counties (Marlette Lake).

**O. BISON Selys—Esmeralda County (Fish Lake Valley).

HERPETOGOMPHUS COMPOSITUS Hagen—Churchill County (Fallon, Humboldt Sink); Pershing County (Rye Patch Reservoir); Washoe County (Wadsworth).

GOMPHUS INTRICATUS Hagen—Churchill and Pershing Counties (Humboldt Sink).

G. OLIVACEUS Selys — Churchill and Pershing Counties (Humboldt Sink).

**OCTOGOMPHUS SPECULARIS (Hagen)—Esmeralda County (Boundary Peak).

Subfamily AESHNINAE.

ANAX JUNIUS (Drury)—Churchill County (Carson Lake, Carson Sink, Fallon, Lahontan Reservoir); Douglas County

(Gardnerville, Topaz Lake); Lyon County (Lahontan Reservoir, Sweetwater); Nye County (Beatty, Springdale).

**A. WALSINGHAMI MacLachlan—Clark County (Boulder Lake).

AESHNA CALIFORNICA (Calvert)—Lyon County (Sweetwater).

AE. MULTICOLOR Hagen—Churchill County (Carson Lake, Carson Sink, Fallon, Lahontan Reservoir); Esmeralda County (Fish Lake Valley); Nye County (Beatty, Springdale).

AE. UMBROSA Walker—Humboldt County (generally throughout the Santa Rosa Mountains).

**AE. WALKERI Kennedy—Esmeralda County (Boundary Peak).

AE. PALMATA Hagen—Washoe County (Truckee Meadows, Washoe Lake).

AE. CONSTRICTA Say—Churchill County (Humboldt Sink); Lyon County (Fernley); Pershing County (Lovelock); Washoe County (Washoe Lake).

AE. INTERRUPTA Walker—Humboldt County (National, Paradise).

**AE. VERTICALIS Hagen—Esmeralda County (Boundary Peak).

### Subfamily CORDULEGASTERINAE.

CORDULEGASTER DORSALIS Hagen—Washoe County (Cody Basin. A single straggler from the High Sierras, first recorded in the author's "Synopsis." The other "Synopsis" records of this species belong to *C. erroneus*). Previous records: none.

*C. ERRONEUS Hagen—Lyon County (Sweetwater); Washoe County (Franktown, Peavine, Verdi). Previous records: Hagen-Selys, 1878; Fraser, 1929; La Rivers, 1940.

### Subfamily MACROMIINAE.

MACROMIA PACIFICA Hagen—Lyon County (Sweetwater); Washoe County (Franktown).

M. MAGNIFICA MacLachlan—Nye County (Beatty).

Subfamily CORDULIINAE.

**SOMATOCHLORA SEMICIRCULARIS (Selys) — Esmeralda County (Boundary Peak).

**CORDULIA SHURTLEFFI Scudder — Esmeralda County (Boundary Peak).

Subfamily LIBELLULINÆ.

LIBELLULA SATURATA Uhler—Churchill County (Carson Lake, Carson Sink, Fallon, Humboldt Sink, Lahontan Reservoir); Esmeralda County (Fish Lake Valley); Lyon County (Lahontan Reservoir); Nye County (Beatty, Springdale).

**L. COMANCHE Calvert—Esmeralda County (Fish Lake Valley); Nye County (Beatty).

*L. PULCHELLA Drury—Douglas County (Gardnerville); Lyon County (Sweetwater); Washoe County (Truckee Meadows).

L. FORENSIS Hagen—Churchill County (Fallon, Lahontan Reservoir); Douglas County (Gardnerville, Genoa, Topaz Lake); Esmeralda County (Fish Lake Valley); Lyon County (Lahontan Reservoir, Smith Valley, Sweetwater, Yerington); Mineral County (Schurz); Nye County (Beatty, Springdale).

L. QUADRIMACULATA Linné—Douglas County (Gardnerville, Lake Tahoe); Ormsby County (Lake Tahoe, Marlette Lake); Washoe County (Lake Tahoe, Marlette Lake, Truckee Meadows).

L. NODISTICTA Hagen — Washoe County (Truckee Meadows).

L. COMPOSITA Hagen — Churchill County (Carson Sink, Fallon, Humboldt Sink).

**PLATHEMIS LYDIA (Drury)—Esmeralda County (Fish Lake Valley); Lincoln County (Pahranagat Valley); Lyon County (Sweetwater); Nye County (Beatty); Washoe County (Truckee Meadows, Wadsworth). Previous records: La Rivers, 1938.

P. SUBORNATA Hagen—Churchill County (Fallon, Lahontan Reservoir); Washoe County (Truckee Meadows).

SYMPETRUM CORRUPTUM (Hagen)—Churchill County (Carson Lake, Fallon, Humboldt Sink, Lahontan Reservoir); Doug-

las County (Genoa, Glenbrook, Minden); Humboldt County (generally throughout the Santa Rosa Mountains); Lyon County (Lahontan Reservoir, Sweetwater); Mineral County (Hawthorne); Ormsby County (Lake Tahoe, Marlette Lake); Washoe County (Franktown, Lake Tahoe, Marlette Lake).

S. ILLOTUM (Hagen)—Douglas County (Gardnerville); Lyon County (Sweetwater); Ormsby County (Carson City); Washoe County (Washoe Lake).

S. MADIDUM (Hagen)—Humboldt County (National).

S. PALLIPES (Hagen)—Churchill County (Fallon, Humboldt Sink); Humboldt County (Paradise Valley).

*S. OBTRUSUM (Hagen)—Elko and White Pine Counties (Ruby Valley). Previous records: Ahrens, 1938 (as S. decisum Hagen).

S. RUBICUNDULUM (Say)—Churchill County (Carson Sink, Fallon, Lahontan Reservoir); Washoe County (Wadsworth).

S. SEMICINCTUM (Say)—Churchill County (Carson Lake, Fallon, Humboldt Sink, Lahontan Reservoir); Humboldt County (Paradise Valley).

S. COSTIFERUM (Hagen)—Churchill County (Fallon).

S. DANAE (Sulzer)—Churchill County (Fallon).

S. ATRIPES (Hagen)—Douglas County (Gardnerville).

**LEUCORRHINIA HUDSONICA (Selys)—Esmeralda County (Boundary Peak).

L. GLACIALIS Hagen—Esmeralda County (Boundary Peak).

PACHYDIPLAX LONGIPENNIS (Burmeister) — Churchill County (Fallon, Lahontan Reservoir); Douglas County (Gardnerville, Topaz Lake); Washoe County (Verdi).

ERYTHEMIS SIMPLICICOLLIS (Say)—Churchill County (Fallon, Lahontan Reservoir); Douglas County (Gardnerville, Genoa); Lyon County (Lahontan Reservoir, Smith Valley, Sweetwater, Wabuska, Yerington); Washoe County (Verdi).

PANTALA HYMENEA (Say)—Esmeralda County (Fish Lake Valley); Nye County (Beatty, Springdale).

P. FLAVESCENS (Fabricius)—Douglas County (Gardnerville); Washoe County (Truckee Meadows, Washoe Valley).

TRAPEZOSTIGMA LACERATA Hagen—Nye County (Beatty).

T. ONUSTA Hagen—Washoe County (Lawton Valley).

(To be continued.)

## A New Species of Coniontis from Nevada (Coleoptera: Tenebrionidae).

By Frank E. Blaisdell, Sr., Stanford Medical School and Associate in Research, California Academy of Sciences, San Francisco, California.

**Coniontis lariversi** new species.

Form oblong-oval to somewhat cuneate, nearly twice as wide, a little more than twice as long as the pronotum. Color deep black; luster dull and alutaceous. Pubescence absent from the superior surface; short, pale hairs are present beneath. Ventral surface more or less polished.

Head relatively small, widest across the posterior canthi and eyes, twice as wide as long before the post-ocular line; sides less prominent than eyes, margin arcuate over the antennal insertions, thence straighter and convergent to the rounded epistomal angles, not sinuate at position of the obliterated oblique sutures. Epistomal apex rather broadly, not deeply, arcuately emarginate. Frons not convex and without impressions, sides slightly convex and briefly declivous against the eyes; surface densely punctate, punctures moderately small and irregular, intervals densely and very minutely punctulate. Labrum transverse, about twice as wide as long; sides arcuate and continuously so with the apex, angles absent; apex rather deeply and arcuately emarginate at middle. Antennae slender, moderate in length, about attaining the posterior third of the pronotum; last four segments moderately compressed; segments two to seven inclusive obconical and more or less elongate; the second about one-half as long as the third; the latter two-and-one-half times as long as wide at apex; segments four, six, seven and eight subequal in length, and less than twice as long as wide at apex; eight obconico-subtriangular, ninth and tenth triangular and as long as wide; eleventh, slightly smaller and widest at middle, apex subacute.

Pronotum about one-third wider than long, widest in basal half; apex broadly emarginate between the bluntly rounded angles in moderate circular arc, marginal bead very narrow and inconspicuous; sides arcuately convergent anteriorly, less so behind the middle and parallel; base subtransverse, very broadly and feebly arcuate in middle two-fourths, thence broadly slightly sinuate to the moderately, posteriorly prominent angles. Disk evenly convex from side to side and rather antero-laterally declivous, sparsely and irregularly punctate, punctures smaller than

on the head, the intervals indistinctly punctulate; lateral margins distinctly and moderately strongly beaded; submarginal grooves very narrow and rather deep; base not beaded.

Elytra oblong, a little more than twice as long as wide and two-and-two-sixths times as long as the pronotum at middle; base truncate, scutellum triangular and impunctate; humeri narrowly rounded and not prominent beneath the pronotal basal angles; sides straight, parallel or somewhat convergent to apical third, thence arcuately convergent to the subacute apex. Disk rather evenly arcuate from side to side, moderately and arcuately declivous apically; punctures small and inconspicuous, irregular, intervals with a number of fine, irregular feebly impressed lines; apical declivity slightly rugose. Marginal bead narrow and scarcely visible from above, except at humeri and apically.

Prosternum rather densely punctate, punctures moderately small becoming somewhat coarser on the intercoxal process, which is feebly and rather indistinctly margined laterally between the coxae, apex not margined. Propleurae smooth, coxal convexities finely and longitudinally rugose. Sterna very finely and sparsely punctate.

Abdomen polished and shining, sparsely punctulate and more or less irregularly but not strongly rugose.

Middle and posterior legs rather long, femora rather narrow and parallel; the metafemora two-fifths of their length longer than the mesofemora; tarsi long and slender.

Measurements.—(Types) Length 17-17.5 mm.; width 7-8 mm.

*Holotype,* female, No. 5077, and *allotype,* male, No. 5078, Museum of the California Academy of Sciences. Collected in the vicinity of Reno, NEVADA, by Ira La Rivers, to whom the species is dedicated. Paratypes in the Academy of Natural Sciences of Philadelphia. The author in 1902, collected a few specimens along the railroad toward Truckee from Verdi, Nevada.

♂ ♂.—Form narrower, often more or less cuneate. Prosternal intercoxal process slightly wider and feebly more convex, with the punctures a little coarser than in the opposite sex.

♀ ♀.—Form oblong-oval and broader. Prosternal process more finely punctate and the surface quite flat.

*Lariversi* does not belong to the Opaca Group of Casey, which contain some of the smallest species of the genus, and the size

does not as far as known exceed 10 mm. One of the species, *nevadensis* Casey occurs at Reno, Nevada and was named from a single specimen. In the *abdominalis, strenua, robusta* Group of Casey,the body is large in size and much broader; the prosternal process is more apt to be margined throughout. Twenty-two specimens studied.

## Addenda to the Odonata of Maryland.

By HERBERT H. MOOREFIELD,
The Natural History Society of Maryland, Baltimore.

Since the appearance of the recent "List of Maryland Odonata", by Elizabeth G. Fisher,* the writer has compiled a few further notes of interest on the Anisoptera of this State. The specimens listed below are deposited in the collection of the Department of Entomology, Natural History Society of Maryland, and were collected by the writer unless otherwise noted.

The majority of the important collecting stations were described in Fisher's report, and the only one of additional interest is Twin Lakes. These are two small, natural lakes near Lansdowne, Baltimore County.

FAMILY AESHNIDAE.

Aeshninae.

1. GOMPHAESCHNA ANTILOPE (Hagen). Druid Hill Park, Baltimore City, June 5, 2 ♀, (D. N. Bachrach). A male of this species was taken on the eleventh floor of a downtown office building of Baltimore City on the same date.

Cordulegasterinae.

2. CORDULEGASTER OBLIQUUS (Say), Bengies, Harford Co., June 12, 1 ♀, (D. N. Bachrach). Cross Country Blvd., Baltimore City, July 5, 1 ♂. This species was depositing eggs in a fresh water stream on June 12, at Bengies, Md.

FAMILY LIBELLULIDAE.

Cordulinae.

3. SOMATOCHLORA FILOSA (Hagen). Tolchester, Kent Co., August 16, 1 ♀.

* Ent News, 1940, Vol. LI, No. 2, pp. 37-42; Vol. LI, No. 3, pp. 67-72.

4. CORDULIA SHURTLEFFI Scudder. Mountain Lake Park, Garrett Co., June 26, 1 ♂, (H. C. Seibert).

Libellulinae.

5. CELITHEMIS MONOMELAENA Williamson. Twin Lakes, Baltimore Co., June 13, 1 ♂, 1 ♀; July 8, 1 ♀.

6. LADONA EXUSTA (Say). Lake Shore, Anne Arundel Co., May 28, 1 ♂.

7. L. JULIA (Uhler). Lake Shore, Anne Arundel Co., May 28, 2 ♂; June 2, 2 ♂. Twin Lakes, Baltimore Co., June 26, 1 ♀.

8. LIBELLULA AXILLENA Westwood. Twin Lakes, Baltimore Co., June 13, 1 ♀. Laurel, Prince George Co., July, 1 ♂.

9. LEUCORRHINIA INTACTA (Hagen). Hillendale, Baltimore Co., July 6, 1 ♀, (H. C. Seibert).

10. TRAPEZOSTIGMA CAROLINA (Linnaeus). Lake Shore, Anne Arundel Co., May 28, 1 ♂; June 2, 2 ♂; August 6, 2 ♂. Twin Lakes, Baltimore Co., June 13, 1 ♂, Tolchester, Kent Co., August 16, 1 ♂. This species was observed mating at Lake Shore, on June 2.

## A New Species of Trox from Texas (Coleoptera: Scarabaeidae).

By MARK ROBINSON, Sharon Hill, Pennsylvania.

**Trox (Omorgus) fuliginosus** new species.

This interesting species is closely related to the well known *T. monachus* Herbst, but can readily be distinguished by the color differences and dissimilarity of the male genitalia. The elytra tubercules are usually a little higher and the wings a trifle longer in *monachus*.

Oblong; iron-gray opaque coating over entire body except head, thoracic and elytral tubercules, elytral umbones, tibiae and tarsi which have an ochraceous-yellow opaque coating. The opaque coating under a high magnification might be called granule-pollinose.

Clypeus triangular; vertex of head with two tubercules side by side, in front of each of which near the clypeal margin is

a deep pit. Entire anterior and side margin of head strongly reflexed and fimbriate with ochraceous-orange hairs.

Thoracic ridges and tubercules as usual in this subgenus; side margins evenly rounded except near the hind angles where they are deeply incised, hind margin indicated with a raised line especially laterally. Dorsal surface of ridges and tubercles moderately not densely punctured, each puncture bearing a short ochraceous-orange scale like hair.

Elytral tubercules low, oval; arranged in four primary rows in addition to the sutural row; between each of these rows is a vague line of minute tubercles and between the rows of smaller and larger tubercles is a line of shallow punctures. Humeral and apical umbone prominent.

Scape of antenna black; bristling with rather long ochraceous-orange hairs; funicle reddish, glabrous; club ochraceous-yellow. Apical process of anterior tibiae unifid, side margin of tibiae without trace of denticles, plane. Abdominal plates with a few scattered punctures.

The male genitalia of the present species are generally wider and blunter than *monachus;* the inner margins of the claspers are expanded posteriorly until they form nearly parallel lines for one-fifth the length of the genitalia; in *monachus* this section of the genitalia forms an ovate figure. Viewed laterally, the tips of the claspers are longer and bent downward a trifle more than they are in *monachus.*

Wings: Length, 16.9 mm.; Breadth, 6.0 mm.

Length, 14.2 to 15.1 mm.; Breadth, 7.8 to 8.5 mm.

*Type.*— ♂, New Braunfels, Comal County, Texas, April 10, 1902 (H. Mittendorf). [In the collection of the United States National Museum].

*Allotype.*— ♀, With same data as type. [In collection of the United States National Museum].

*Paratypes.*—1 ♂, With same data as type. 1 ♀, Harris County, Texas, May 1909 (C. R. Oerto). [Both specimens are in the collection of the author].

## Western Aphid Notes[1] (Homoptera: Aphididae).

By GEORGE F. KNOWLTON[2].

The following report adds to the known distribution of a number of aphids and includes the description of one apparently undescribed species of the genus *Aphis*.

BREVICORYNE SYMPHORICARPI (Thos.). Gallatin Valley, Montana, July 16, 1936 (Knowlton).

CAVARIELLA CAPREAE (Fab.). On *Salix*, Weber Canyon, Utah; on Umbelliferae at Puyallup, Washington, July 28, 1937 (H. C. Bennion).

C. ESSIGI (Gill.). On *Heracleum lanatum* at Spring Hollow, Logan Canyon, Utah, June 19, 1938 (Knowlton-W. P. Nye).

APHIS HERACLELLA Davis. On *Cicuta occidentalis* at Lewiston, Utah, July 13, 1923 (Knowlton).

**Aphis tetradymia** n. sp.

*Apterous vivipara.* Color bluish green; size, 1.3 mm. long and 0.75 mm. wide; antennae 0.81 mm. long, dusky to black; antennal III, 0.18 to 0.2 mm. long, with 0 to 4 sensoria on distal half; IV, 0.09 to 0.1 with 0 to 1 sensorium; V, 0.09 to 0.1; VI, 0.09+0.16 to 0.2 mm. long; rostrum reaching abdomen; rostral IV+V rather thick, 0.13 mm. long; hind tibiae 0.6 to 0.71 mm.; hind tarsi 0.1; cornicles blackish, imbricated, 0.11 to 0.13 mm. long, slightly wider toward base; cauda blackish with 4 to 5 hairs on each side and 3 on dorsal to dorsolateral surfaces.

*Aphis tetradymia* resembles *A. cryptus* P.-K., but differs in having shorter, thicker rostral IV+V, more slender body, and in possessing fewer conspicuous abdominal tubercles. It differs from *A. maidi-radicis* Forbes in being smaller in size, having longer antennae, fewer hairs on cauda, usually possessing sensoria on antennal III and IV of aptera, and having a darker bluish-green body color.

Described from wingless specimens collected upon *Tetradymia canescens* at Fisher's Pass, Tooele County, UTAH, August 16, 1932 (G. F. Knowlton). *Type* in the collection of the writer.

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[1] Contribution from the Entomology Department, Utah Agricultural Experiment Station, Logan.

[2] Research associate professor.

EPAMEIBAPHIS ATRICORNIS G.-P. On *Artemisia,* usually *tridentata,* in Utah at Beaver Dam, Circleville, Hansel's Mountains and Maple Canyon; in Idaho at Preston and Rexburg, 1935 (C. F. Smith); in Colorado at De Beque, 1935, Cross Mountains and Elk Springs, June 25, 1937 (Knowlton).

E. UTAHENSIS K.-S. On *Artemisia vulgaris* in Utah at Blacksmith Fork Canyon, June 10, 1930; on *A. tridentata* at Providence, August 26, 1925, Raft River Mountains, and Woodruff Mountains (Knowlton); Levan, Salt Lake City, and Vernon (Knowlton-C. F. Smith).

FLABELLOMICROSIPHUM KNOWLTONI Smith. On *Artemisia tridentata,* Bountiful and Roy, Utah, June 4, 1937 (Knowlton-Smith).

F. TRIDENTATAE (Wilson). On *Artemisia tridentata* at Beaver Dam, Hansel's Mountains, Junction Valley, Manti and Portage, in Utah; Palisade, August 24, 1925 and Sunbeam, June 25, 1937, in Colorado (Knowlton).

PSEUDOEPAMEIBAPHIS ESSIGI K.-S. On *Artemisia tridentata* at Kelton and Morgan, Utah (Knowlton).

P. GLAUCA G.-P. On *Artemisia tridentata* in Utah at Bountiful, Butlerville, Peterson, Roy and Strawberry Valley (Knowlton-Smith).

P. TRIDENTATAE (Wilson). On *Artemisia tridentata* at Palisade, Colorado, August 24, 1935 (Knowlton); at Burly, Idaho, July 9, 1931 (D. E. Fox).

P. XENOTRICHUS K.-S. On *Artemisia tridentata* in Brigham Canyon, Utah, August 29, 1936 (Knowlton).

RHOPALOSIPHUM GRABHAMI Ckll. On *Lonicera involucrata,* Eden and Logan, Utah, June 1937 (Knowlton-Smith-F. C. Harmston); Mt. Vernon, Washington, June 8, 1935 (A. J. Hanson).

R. MELLIFERUM (Hottes). In Idaho at Blue Gulch, Castleford, Hollister and Wendell (D. E. Fox).

R. RHOIS Mon. On *Rhus* at Granite, Utah, August 1935 (Knowlton).

R. RUFOMACULATA (Wilson). On *Chrysanthemum* at Logan, Utah, in greenhouse, January 10, 1934 (C. F. Smith).

R. SCIRPIFOLII G.-P. Blue Gulch, Idaho (D. E. Fox).

MINUTICORNIS GRAVIDUS Knlt. On *Juniperus* at Pocatello, Idaho, June 18, 1936 (Knowlton).

TOXOPTERA VIRIDI-RUBRA G.-P. Wendell, Idaho, 1930 (Fox).

AMPHOROPHORA CRATAEGI (Mon.). Hollister, Idaho, 1930 (Fox).

A. GERANII (G.-P.). Buhl, Idaho, October 17, 1930 (Fox).

A. GRINDELIAE (Will.). On *Grindelia squarrosa,* Logan, Utah, July 4, 1935; and Franklin, Idaho (Knowlton).

A. RUBI (Kalt.). On raspberry, Hamilton, Montana (W. Shockley).

BIPERSONA TORTICAUDA (Gill.). On *Cirsium* at Salt Lake City, Utah, June 15, 1937 (Knowlton); and Florence, Montana (H. F. Dietz).

CAPITOPHORUS BITRICHUS K.-S. On *Artemisia tridentata,* Hyrum, Utah, August 23, 1938 (Knowlton).

C. GILLETTEI Theob. On *Polygonum,* Enumclaw, Washington, August 18, 1937 (H. C. Bennion).

C. POTENTILLAE (Walk.). On *Rosa nutkana,* near Forks, Washington, August 27, 1936 (W. W. Baker).

C. OESTLUNDI Knlt. On *Chrysothamnus nauseosus* at Elko, Nevada, June 16, 1934 (Knowlton).

C. PYCNORHISUS K.-S. On *Chrysothamnus viscidiflorus* at Riverdale, Idaho, July 24, 1936 (C. F. Smith).

C. QUADRITRICHUS K.-S. On *Artemisia tridentata* at Sunbeam, Colorado, June 25, 1937 (Knowlton).

C. ZOOMONTANUS K.-S. On *Artemisia vulgaris* at Afton, Wyoming, July 19, 1936 (Knowlton).

MACROSIPHUM CREELI Davis. On alfalfa, Mathews, Ephrata, Washington (A. C. Burrill).

M. EUPHORBIAE (Th.). Castleford and Hollister, Idaho, August 1930 (D. E. Fox).

## Honor to an Entomologist.

*Science* for April 25, 1941, states that Hugh Scott, assistant keeper of entomology, British Museum (Natural History), has been elected a fellow of the Royal Society of London.

# Current Entomological Literature

**COMPILED BY V. S. L. PATE, L. S. MACKEY and J. W. CADBURY.**

Under the above head it is intended to note papers received at the Academy of Natural Sciences of Philadelphia pertaining to the Entomology of the Americas (North and South), including Arachnida and Myriopoda. Articles irrelevant to American entomology will not be noted; but contributions to anatomy, physiology and embryology of insects, however, whether relating to American or exotic species will be recorded.

This list gives references of the current or preceding year unless otherwise noted. All continued papers, with few exceptions, are recorded only at their first installment.

For records of Economic Literature, see the Experiment Station Record, Office of Experiment Stations, Washington. Also Review of Applied Entomology, Series A, London. For records of papers on Medical Entomology, see Review of Applied Entomology, Series B.

**Note.** References to papers containing new forms or names not so stated in titles are followed by (*); if containing keys are followed by (k); papers pertaining exclusively to neotropical species, and not so indicated in the title, have the symbol (S) at the end of the title of the paper.

**The figures within brackets [ ]** refer to the journal in which the paper appeared, as numbered in the list of Periodicals and Serials published in our January and June issues. This list may be secured from the publisher of **Entomological News** for 10c. The number of, or annual **volume**, and in some cases the part, heft, &c., the latter **within ( )** follows; then the pagination follows the colon :

**Papers published in the Entomological News are not listed.**

**GENERAL.—Adamson, A. M.**—The geographical distribution of insect pests. [Trop. Agric.] 18: 43-47. **Anon.** How to make an insect collection. [Ward's Nat. Sci. Est., Inc.] 1940: 30 pp., ill. **Berezina, V. M.**—A fragment to the method of investigating the part played by the light in the life of insects. [Bull. Plant Prot. Lenin Ac. Ag. Sci.] No. 3: 37-38. **Blatchley, W. S.**—Obituary with portrait, by W. T. Davis. [19] 36: 18-19. **Blatchley, W. S.**—Obituary. By V. M. Tanner. [120] 2: 33-35. **Calvert, P. P.**—Catalogues of current scientific literature. [Science] 93: 209-210. **Gillette, Clarence Preston.**—Obituary, with portrait, by G. M. List. [12] 34: 129-130. **Herrick & Griswold.**—Common insects of the household. [Cornell Ext. Bull.] No. 202: 66 pp., ill. **Jones, T. H.**—Obituary notice. By Hyslop & Graf. [10] 43: 60-62, ill. **Knowlton & Harmston.**—Insect food of the Chipping Sparrow. [12] 34: 123-124. **Martorell, L. F.**—Some notes on forest entomology IV. [The Caribbean Forester] 2: 80-82. **Silvestri, F.**—Importancia de la Entomologia en la Economia Mundial. [An. Esc. Nac. Cien. Biol. Mex.] 1: 301-315. **Smith, H. S.**—Racial segregation in insect populations and its significance in applied entomology. [12] 34: 1-13. **Spencer, G. J.**—Lead or tin tubes in a biological laboratory. [4] 73: 54. **Swingle, Gahan & Phillips.**—Laboratory rearing of certain leaf-eating insects.

[12] 34: 90-95, ill. **Warren, B. C. S.**—A few comments on some inconsistent criticism. [9] 74: 51-53. **Woodworth, Chas. Wm.**—Obituary with portrait, by E. O. Essig. [12] 34: 128-129.

**ANATOMY, PHYSIOLOGY, ETC.—Abbott, C. E.**—Concerning the musculature of the male genitalia in Panorpa nuptialis (Mecoptera). [6] 49: 43-46, ill. **Bryson & Dillon.**—Observations on the morphology of the corn seed beetle, Agonoderus pallipes (Carabid.). [7] 34: 43-50, ill. **Cumpston, D. M.**—On the external morphology and biology of Heteronychus sanctae-helenae and Metanastes vulgivagus (Scarab.). [Pro. Linn. Soc. N. S. W.] 65: 289-300, ill. **Ermolaev, M. F.**—The biology of Thrips linarius and control measures against it. [Bull. Plant Prot. Lenin Ac. Ag. Sci.] No. 3: 23-34, ill. **Geigy & Zinkernagel.**—Beobachtungen beim Aufbau einer technischen Grosszucht der Kleidermotte (Tineola biselliella). [41] 18: 213-232, ill. **Giral, F.**—Pigmentos fluorescentes de insectos y bacterias. [Rev. Soc. Mexicana Hist. Nat.] 1: 243-254, ill. **Hagmann, L. E.**—A method for injecting insect tracheae permanently. [Stain Technology] 15: 115-118, ill. **Hanstrom, B.**—Die chromatophoraktivierende substanz des insektenkopfes. [Lunds Univ. Arsskrift] 36: 20 pp., ill. **Hawley & Dobbins.**—Mortality among hibernating larvae of the Japanese beetle with special reference to conditions in the winter of 1935-36. [6] 49: 47-56, ill. **Hitchcock & Haub.**—The interconversion of foodstuffs in the blowfly (Phormia regina) during metamorphosis. I.—Respiratory metabolism and nitrogen excretion. [7] 34: 17-25; 32-37, ill. III.—Chemical composition of larvae, pupae and adults. **Holdsworth, R. P.**—The histology of the wing pads of the early instars of Pteronarcys proteus (Plecoptera). [5] 47: 112-120, ill. **Kozhanchikov, I. V.**—The importance of the physical conditions of environment upon the development of the eggs of the gipsy moth (Lymantria dispar). [Bull. Plant Prot. Lenin Ac. Ag. Sci.] No. 3 (1940) 3-16, ill. Effect of ecological factors upon the variability of certain Lepidoptera during the period of their growth and development. [Trav. Inst. Zool. Acad. Sci. URSS] 6: 64-114, ill. **Kozhantschikov, J. W.**—Influence of ecological factors on development and variability of lepidoptera. [Bull. Acad. Sci. URRS] 1940, 761-782, ill. **Lotmar, R.**—Das Mitteldarmepithel der Raupe von Tineola biselliella (Kleidermotte), insbesondere

sein Verhalten wahrend der Hautungen. [41] 18: 233-248, ill. **Ludwig & Fox.**—Further studies of conditions influencing the survival of Japanese beetles through metamorphosis. [6] 49: 65-75. **Mickey, Carpenter, Cumley & Burdette.**—Experiments on culture media in regard to oviposition and mass production of Drosophila melanogaster. [6] 49: 77-84. **Nesbitt, H. H. J.**—A comparative morphological study of the nervous system of the Orthoptera and related orders. [7] 34: 51-81, ill. **Patton, Hitchcock & Haub.**—The interconversion of food-stuffs in the blowfly (Phormia regina) during metamorphosis. II.—Changes in composition as determined by the oxycalorimeter. [7] 34: 26-31, ill. **Putman, W. L.**—The feeding habit of certain leafhoppers (Homoptera: Cicadellidae) [4] 73: 39-53, ill. **Roth & Howland.**—Studies on the gaseous secretion of Tribolium confusum. I.—Abnormalities produced in Tribolium confusum by exposure to a secretion given off by the adults. [7] 34: 151-176, ill. **Shaw, F. R.**—Bee poisoning: a review of the more important literature. [12] 34: 16-21. **Strelnikov, I. D.**—The effect of solar radiation and hunger on the pulsation of the heart of the caterpillars of Phytometra gamma. [Trav. Inst. Zool. Acad. Sci. URSS] 6: 266-288, ill. **Sweetman, H. L.**—Tests for toxicity of arsenicals and sodium fluoride to the American roach, Periplaneta americana. [4] 73: 31-34. **Tshernova, O. A.**—Report on biology and morphology of Pleonomus tereticollis (Elateridae). [Trav. Inst. Zool. Acad. Sci. URSS] 6: 138-149, ill. **Weiss, Soraci & McCoy.**—Notes on the reactions of certain insects to different wave-lengths of light. [6] 49: 1-20, ill. **Wesson, L. G.**—See under Hymenoptera.

**ARACHNIDA AND MYRIOPODA.—Chamberlain & Mulaik.**—On a collection of Millipeds from Texas and New Mexico. [6] 49: 57-64 (*). **Chamberlin, R. V.**—New Polydesmoid Diplopods intercepted at quarantine [10] 43:32-35, ill. (S). **Lundblad, O.**—Weitere neue Wassermilben aus Brasilien und Paraguay. [28] 62: 122-126. **McGregor, E. A.**—A new spinning mite attacking strawberry on the mid-atlantic coast. [10] 43: 26-28, ill. **Michelbacher, A. E.**—Two genera of Symphyla new to the United States, with descriptions of three n. spp. [7] 34: 139-150, ill. **Parker, M. V.**—Preliminary list of spiders collected in the vicinity of Reelfoot Lake, Tennessee. [Jour. Tenn. Acad. Sci.] 16: 88-91. **Seyler, P. J.**—The generic and specific status of

four Ohio spiders of the gen. Agelenopsis. [43] 41: 51-69, ill.

**THE SMALLER ORDERS OF INSECTS.—Bick, G. H.**—Life-history of the dragonfly, Erythemis simplicicollis (Odonata: Libellul.). [7] 34: 215-230, ill. **Bolivar y Pieltain, C.**—Estudio de un nuevo Zoraptero de Mexico. [An. Esc. Nac. Cien. Biol. Mex.] 1: 515-522, ill. **Claassen, P. W.**—A catalogue of the Plecoptera of the World. [Cornell Univ. Ag. Exp. Sta.] Mem. 232: 235 pp. **Coleman, T. C.**—The Poduridae of southern California. [13] 33: 1-12, ill. **da Costa Lima, A.**—Nota sobre as especies de "Tunga (Tungidae). [Acta Medica] 5: 4 pp. **Crampton, G. C.**—The mating habits of the winter Mecopteron, Boreus brumalis. [5] 47: 125-128, ill. **Davis, C.**—Taxonomic notes on the order Embioptera. [Pro. Linn. Soc. N. S. W.] 65: 323-352; 362-387, ill. **Denning, D. G.**—Descriptions and notes on new and little known spp. of Trichoptera. [7] 34: 195-203, ill. **Fox, I.**—New or little known North American Japygidae (Thysanura). [4] 73: 28-31, ill. **Hood, J. D.**—La causa y el significado del macropterismo y braquipterismo en ciertos Tisanopteros, y descripcion de una nueva especie Mexicana. [An. Esc. Nac. Cien. Biol. Mex.] 1: 497-505, ill. Un nuevo Teuchothrips (Thysanoptera) procedente de Mexico. [An. Esc. Nac. Cien. Biol. Mex.] 1: 507-511. **Kimmins, D. E.**—A revision of the osmylid sub-families Stenosmylinae and Kalosmylinae. [71] 42: 165-201, ill. **Spieth, H. T.**—The North American Ephemeropteran types of the Rev. A. E. Eaton. [7] 34: 87-98, ill. **Stahler, N.**—The life history of Phloeothrips (Hoplandrothrips) sycamoremsis (Thysanoptera). [55] 17: 31-33. **Tjeder, B.**—Some remarks on "The generic names of the British Neuroptera." [28] 62: 24-31, ill. Revisions of the Scandinavian Neuroptera (s. str.) and Mecoptera recorded by J. W. Zetterstedt, H. J. D. Wallengren and others. [Opuscula Ent.] 5: 67-114. **Walker, E. M.**—New record of Odonata from Manitoba. [4] 73: 35-36.

**ORTHOPTERA.—da Costa Lima, A.**—Um novo grilo cavernicola de Minas Gerais. (Phalangopsitid.). [Pap. Avul. Dept. Zool., Sao Paulo] I: 43-49, ill. **Dampf, A.**—Un caso de fitomimetismo en un Ortoptero Mexicano. [An. Esc. Nac. Cien. Biol. Mex.] 1: 525-532, ill. **Ebner, R.**—Orthopterologische studien in Sud-Portugal. [Broteria] 10: 5-28, ill. **Flock, R. A.**—The field roach, Blatella

vaga. [12] 34: 121. **La Rivers, I.**—Response of Anabrus simplex to temperature. [12] 34: 121-122. **Rehn, J. A. G.**—Two new Ommexychid locusts of the genus Parossa, with a key to the species (Acrididae). [Notulae Nat.] No. 79: 11 pp., ill. **Rehn, J. W. H.**—A new genus of mellierid mantid from Venezuela (Manteid.). [Notulae Nat.] No. 70: 4 pp., ill. **Rehn & Rehn.**—The Orthoptera of the Philippine Islands, Part II. Acrididae; Cyrtacanthacrid; group Cyrtacanthacrides. [Proc. Acad. Nat. Sci. Phila.] 92: 245-287, ill. **Roberts, H. R.**—A new species of Philocleon from Mexico (Acridid.). [Notulae Nat.] No. 76: 4 pp., ill.

**HEMIPTERA.—Balduf, W. V.**—Life history of Phymata pennsylvanica americana (Phymat.) [7] 34: 204-214. **Cooper, K. W.**—Davispia bearcreekensis, a new cicada from the paleocene, with a brief review of the fossil Cicadidae. [Amer. Jour. Sci.] 239: 286-304, ill. **da Costa Lima, A.**—Novo Hemiptero Reduviideo da sub-familia Vesciinae. [Arq. Zool. Est. Sao Paulo] 1: 485-490, ill. **Um novo** Ceroplastes gigante (Coccid.). [Pap. Avul. Dept. Zool., S. Paulo] 1: 9-11, ill. **Craig, F. W.**—Observations on the periodical cicada. [12] 34: 122-123. **Davis, W. T.**—New Cicadas from North America with notes. [6] 49: 85-99, ill. **DeLong, D. M.**—The red-banded Osbornellus spp. of the auronitens group occurring in the United States (Cicadellidae). [7] 34: 179-180, ill. (*). The gen. Prescottia (Cicadellidae) in North America. [7] 34: 181-182, ill. (*). A n. gen. (Knullana) and two n. spp. of leafhoppers (Cicadellidae) from Mexico. [43] 41: 86-88, ill. Los Phlepsidos (Phlepsius y Texananus) de Mexico (Cicadellid.). [An. Esc. Nac. Cien. Biol. Mex.] 1: 379-404, ill. **DeLong & Knull.**—Two n. spp. of Osbornellus from the southwestern United States. (Cicadellidae). [7] 34: 177-178, ill. **Ferris, G. F.**—Contributions to the knowledge of the Coccoidea. IX. A forgotten genus of the family Margarodidae. X. Illustrations of eleven genotypes of the Diaspididae. XI. A new genus in the Pseudococcidae. [117] 6: 6-28, ill. A new species of Stomacoccus. [117] 6: 29-32, ill. **Hungerford, H. B.**—A remarkable new Naucorid water bug. [7] 34: 1-4, ill. **McKenzie, H. L.**—A new species of the genus Matsucoccus attacking Pinon Pine in California [117] 6: 2-5, ill. **Ossiannilsson, F.**—Some new Fulgorina (Homoptera) from Java and South America. [Opuscula Ent.] 5: 41-46, ill. **Pelaez, D.**—Los estadios ninfales de Umbonia

crassicornis. [An. Inst. Biol. Mex.] 11: 611-632, ill. **Ruckes, H.**—Note on the feeding habits of Brochymena carolinensis in Florida (Pentatomidae). [19] 36: 27-28. **Usinger, R. L.**—Key to the subfamilies of Naucaoridae with a generic synopsis of the new subfamily Ambrysinae. [7] 73: 5-16, ill.

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THE EMBRYOLOGY OF INSECTS AND MYRIAPODS. The developmental history of insects, centipedes, and millipedes from egg desposition [sic] to hatching. By OSKAR A. JOHANNSEN, Professor of Entomology, Emeritus, Cornell University, and FERDINAND H. BUTT, Instructor in Insect Morphology, Embryology, and Histology, Cornell University. First edition. McGraw-Hill Book Co., Inc., New York and London, 1941. Pp. xi, 462, 370 figs. $5.00—This book is, we believe, the first in English, if not in any western European language, dealing exclusively with the comparative embryology of insects and myriapods. As such it is of first rate importance. It is based on instruction given for more than twenty years at Cornell University. It summarizes a wide range of literature; the bibliography occupies 37 pages (417-453) and contains perhaps 850 titles; few, if any, of importance are lacking. It is divided into two parts, which may be called general (pp. 1-164) and special (pp. 165-415) embryology. Chapter II, A type of embryonic development in insects (pp. 9-23), follows through "a brief outline of the development of a typical insect from the time of maturation of the egg nucleus to the emergence of the larva from the egg. . . . This account does not apply to any specific insect but rather to a generalized type that possesses characteristics common to many insects in most particulars." With this as a starting point, the reader is prepared for more detailed accounts of the egg, its differentiation, fertilization, maturation and cleavage (Chap. III), blastoderm, germ band, segmentation and the appearance of appendages (IV), embryonic membranes, dorsal organs and blastokinesis (V), gastrulation and germ layers (VI), development of the alimentary canal (VII), the ectodermal (VIII) and mesodermal (IX) derivatives. Chap. X is concerned with polyembryony and parthenogenesis, XI with micro-organisms in the egg and XII with experimental embryology (pp. 144-164). Part I is illustrated by 62 figures, of which 34 are described in the preface as copies of diagrams used in the authors' classes; the remaining 28 are taken from the writings of well-known embryologists from Hertwig, 1881, to Seidel, 1935. Part II consists of summaries of the embryonic development of representatives of

taxonomic groups as described in the literature, and in original work of the junior author. "By the selection of illustrative species in the second part which are not especially stressed in the first part, undue repetition is avoided." Part II, therefore, will be very useful to those who have not easy access to the scattered memoirs upon which it is based. The taxonomic headings of its chapters, the examples described, the authors chiefly followed, their dates, and the number of figures drawn from their works are as follows. Chap. XIII. Oligoentomata and Aptilota: The springtail, *Isotoma cinerea,* Philiptschenko, 1912 37 figs.; *Campodea staphylinus,* Uzel, 1898, 9 figs.; the silver fish, *Lepisma saccharina,* Heymons, 1897, 4 figs. XIV. Ephemerida, Odonata, Plecoptera, Embiaria, Dermaptera, Hemimerina: the may fly, *Ephemera vulgata,* Heymons, 1896; dragonflies and damselflies, *Libellula pulchella, Erythemis simplicicollis, Plathemis lydia,* Butt, new, 12 (really 19) figs., *Calopteryx,* Brandt, 1869, 2 figs. (really 6, old stand-bys in embryological literature!), the stone fly, *Pteronarcys proteus,* Miller, 1939; *Embia uhrichi,* Kershaw, 1914, 1 fig. (so numbered, really 16); the earwig, *Forficula auricularia,* Heymons, 1895; *Hemimerus talpoides,* Heymons, 1912. XV. Orthopteroidea (Panorthoptera): *Paratenodera sinensis,* Hagan, 1917; the Croton bug, *Blattella germanica,* Wheeler, 1889, 1 fig., and L. C. Pettit, new, 4 figs.; the termite, *Eutermes rippertii*?, Knower, 1900, 4 figs.; the walking stick, *Carausius morosus,* Leuzinger, Wiesmann and Lehmann, 1926, 1 (really 5) fig.; the African migratory locust, *Locusta migratoria migratorioides,* Roonwal, 1936, 30 figs.; the differential locust, *Melanoplus differentialis,* Nelsen, 1934. XVI. Oligonephridia Copeognatha, Anoplura, Thysanoptera, Hemiptera): a viviparous psocid, *Archipsocus fernandi,* Fernando, 1934, 8 figs.; the head louse, *Pediculus humanus capitis,* Schölzel, 1937, 6 figs.; the pigeon louse, *Lipeurus baculus,* Ries, 1931, 1 fig.; the guinea pig louse, *Gyropus ovalis,* Strindberg, 1916; thrips, *Thrips physapus,* Uljanin, 1874; aphids, Toth, 1933, 6 figs., Will, 1883, 2 figs. (really 6), Webster and Phillips, 1912, 7 figs.; *Siphanta acuta,* Muir and Kershaw, 1912, 5 figs.; the fire bug, *Pyrrhocoris apterus,* Seidel, 1924, 6 figs.; the milkweed bug, *Oncopeltus fasciatus,* and *Anasa tristis,* Butt, new, 5 (really 10) figs.; a polyctenid, *Hesperoctenes fumarius,* Hagan, 1931, 2 figs. XVII. Neuroptera and Coleoptera: the alder fly, *Sialis lutaria,* Strindberg, 1915, 2 figs.; the pearl-eye, *Chrysopa perla,* Tichomirowa, 1890, 1892, Bock, 1939; *Stylops,* Noskiewicz and Poluszynski, 1927, 17 figs.; the alfalfa snout beetle, *Brachyrhinus ligustici,* Butt, 1936 and

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## OBITUARY

Dr. HUGO KAHL, curator of entomology at the Carnegie Museum, Pittsburgh, until last January when he became curator emeritus, died on February 19, in his eighty-second year.—*Science,* April 18, 1941.

# EXCHANGES

**This column is intended only for wants and exchanges, not for advertisements of goods for sale or services rendered. Notices not exceeding three lines free to subscribers.**

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**These notices are continued as long as our limited space will allow; the new ones are added at the end of the column, and, only when necessary those at the top (being longest in) are discontinued.**

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**Wanted.**—To hear from specialists who would care to determine some family of insects for a share of the duplicates. We have many specimens, especially in some families of Diptera and Hymenoptera. H. E. Jaques, Iowa Insect Survey, Mt. Pleasant, Iowa.

**Insects from Northern Korea.**—I will collect insects for specialists in certain groups upon their request; very rich fauna; rates reasonable. Address: Mr. Alexander M. Yankovsky, Shuotsu-Ompo, Korea, Japan.

**Wanted**—Living specimens of the luminous beetle **Phengodes** this summer. E. Newton Harvey, The Biology Dept., Princeton University, Princeton, New Jersey.

**Malacodermata** (except Lycidae and Cleridae) of the world. Will determine and purchase. Also exchange against Col. or all other insects from Bolivia. Walter Wittmer, Casilla 852, La Paz, Bolivia, S. America.

**I want** to collect Rothschildia, agapema, gulfina and io moths and Texas butterflies for interested persons. Eula Frizzell, R 4 San Benito, Texas.

**Wanted**—To hear from collectors who desire extra good cocoons of Michigan **Platysamia columbia,** that will emerge June, 1941. W. S. McAlpine, 575 Townsend St., Birmngham, Michigan.

**Wanted**—Specimens of the genus Trox from North America. Will exchange or determine for duplicate material. Mark Robinson, 231 Cherry St., Sharon Hill, Pennsylvania.

**Lepidoptera**—From the South, including P. palamedes, T. halesus and E. jucunda to exchange for fauna from other localities. H. W. Eustis, 2230 McDow ll St., Augusta, Georgia.

**Wanted**—Egg cases of preying mantids. Correspondence desired with those who will collect. Osmond P. Breland, Department of Zoology, The University of Texas, Austin, Texas.

**Wanted**—To buy, specimens of bees of the genus **Nomada,** any quantity, especially North American. Quote price, locality. Hugo G. Rodeck, University of Colorado Museum, Boulder Colorado.

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